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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,799	11/23/2001	George Jackowski	2132.086	5599

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EXAMINER	
CHERNYSHEV, OLGA N	
ART UNIT	**PAPER NUMBER**
1649	

DATE MAILED: 09/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/991,799	JACKOWSKI ET AL.	
	Examiner	Art Unit	
	Olga N. Chernyshev	1649	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 39-46* is/are pending in the application.

4a) Of the above claim(s) *39-46* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to amendment

1. Claims 1 and 39 have been amended as requested in the amendment filed on August 24, 2006.

Claims 1 and 39-46 are pending in the instant application.

Claims 39-46 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to an invention nonelected by original presentation, there being no allowable generic or linking claim.

Claim 1 is under examination in the instant office action.

2. The Text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Any objection or rejection of record, which is not expressly repeated in this action has been overcome by Applicant's response and withdrawn.

4. Applicant's arguments filed on August 24, 2006 have been fully considered but they are not deemed to be persuasive for the reasons set forth below.

Claim Rejections - 35 USC § 101

5. Claim 1 stands rejected under 35 U.S.C. 101 because the claimed invention is drawn to an invention with no apparent or disclosed specific and substantial credible utility for reasons of record fully explained in the previous communications from the Office.

Applicant traverses the rejection by first reviewing the instant rejection of record (pp.8-16). Applicant further briefly explains the methods of identification and differential expression

of the claimed biomarker (pp.16-18 of the Response). Applicant further refers to *Raytheon Company v. Roper Corp.* stating that, "if an invention meets at least one stated utility, utility as a whole is established"(p. 20). Applicant submits that, "the Examiner has failed to present any countervailing facts and reasoning sufficient to establish that a person of ordinary skill in the art would not believe the Applicant's assertion of utility" (p. 21 of the Response). Applicant's arguments have been fully considered but are not persuasive for the following reasons.

Claim 1, as currently amended, is directed to a biopolymer marker consisting of amino acid sequence 2-18 of SEQ ID NO: 1 which evidences a link to Alzheimer's disease. According to the instant disclosure, the instant claimed biomarker was isolated from samples of blood collected from AD patients. The protocol, (p. 25-26 of the specification), of the isolation is as follows: (1) protein fractions of the samples of blood are subjected to electrophoresis; (2) the bands, which are of different density (between "disease" and "control" columns), are visually identified, ("observed expression pattern", emphasis added, see Applicant's Response at p. 18); (3) the protein content of a band that is "darker" on the gel (Fig. 1) is extracted, proteolytically cleaved by trypsin and (4) subjected to further analysis by electrophoresis or means of mass spectrometry to identify the precise structure of the protein fragment contained within the sample. Thus, it is obvious that "differential expression" of bands between AD samples and control samples as seen in Figure 1 has only relative significance with respect to the differential distribution of the instant claimed protein itself. As fully explained earlier, the Examiner does not dispute the results presented in Figure 1 or disclosed in the instant specification, as it is obvious that the bands in columns related to AD and controls do look differently. However, this visually "observed expression patern", followed by identification of the structure of a protein fragment

within the darker looking band does not allow the immediate conclusion of finding a biomarker for AD. As fully explained in the earlier communications, the finding of a fragment of a known protein in a sample obtained from a patient suspected of having AD is not sufficient to establish the specific and substantial credible utility for the instant protein fragment. One readily appreciates that many proteins are differentially expressed between healthy and "diseased" tissues; however, not all of these proteins constitute biomarkers, as molecules that allow distinguishing disease *vs*. healthy state.

It is obvious that finding a difference, any difference, between normal and pathological conditions (samples in the instant case) is the first step in hope of identifying potential markers for that pathological condition. However, one would reasonably expect that many proteins are differentially expressed during course of disease; however, not all of them can serve as diagnostic tools. The instant specification identified a peptide that is "linked" to AD by virtue of it being found in a sample that was observed as being "different" from control samples. However, there appears no further characterization presented that would lead to the "real world" specific utility of this peptide as biomarker for AD. There appears to be no information presented in the instant specification as to what constitutes finding of a peptide 2-18 of SEQ ID NO: 1 as "evidence of a link to Alzheimer's disease".

Regarding the merit of the argument, it appears that Applicant uses phrases "evidence of a link to Alzheimer's disease" (claim 1 and throughout the text of the Response) and "a marker for Alzheimer's disease" (bottom at page 18 of the Response) interchangeably. However, establishing if the instant claimed molecule represents a marker for a disease or evidences a non-specified link to a disease constitutes a major issue with respect to determination of a specific

and substantial credible utility. While identification of a molecule that could serve as a diagnostic tool for clinical purposes represents an invention with a specific and substantial credible utility, the disclosure of a molecule that is described as "evidence of a link to" a disease condition is suitable only to benefit further research. Applicant submits at p.18 that the claimed protein "was present in samples obtained from patients having Alzheimer's disease and absent in samples obtained from age-matched control patients". If this were the case, then the claimed molecule would be considered a marker for AD (providing that the samples were obtained from patients with confirmed AD diagnosis) and not just "an evidence of a link". However, it appears that the instant specification does not contain any specific recitation regarding the absence of the instant claimed protein in control samples. Applicant is advised to provide reference to specific pages within the instant specification as filed, which would substantiate Applicant's statement that 2-18 of SEQ ID NO: 1 was not found in control samples.

There is no argument that finding of the fragment peptide 2-18 of SEQ ID NO: 1 in blood samples of patients suspected of having Alzheimer's disease represents an interesting observation, which after further research and development could potentially lead to identification of the claimed protein as a marker useful for diagnosis, or as a molecule that is useful as an indicator of a specific link shown to be associated with stage, progression or risk factor of AD, for example. However, until this further characterization is complete and practical significance of the peptide 2-18 of SEQ ID NO: 1 is disclosed, the instant claimed protein fragment could only be used as an object of further research.

The Examiner maintains that based on the information presented in the instant specification as originally filed, the instant claimed invention, an isolated biomarker 2-18 of SEQ

ID NO: 1, asserted to be useful for diagnostics and therapeutics of Alzheimer's disease, clearly lacks specific and substantial credible real-world utility and, therefore, the instant invention does not meet the requirements of 35 U.S.C. § 101 as being useful.

Claim Rejections - 35 USC § 112

6. Claim 1 is also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a clear asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Conclusion

7. No claim is allowed.

8. This application contains claims 39-46 drawn to an invention nonelected with traverse. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga N. Chernyshev whose telephone number is (571) 272-0870. The examiner can normally be reached on 8:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet L. Andres can be reached on (571) 272-0867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Olga N. Chernyshev, Ph.D.
Primary Examiner
Art Unit 1649

September 15, 2006